REMARKS

Claims

Prior to the above amendments, claims 1-13 were pending. Claims 1-4, 6, 8-9, are amended. Support for the amendments can be found, for example, at page 25, 2nd para., page 26, 2nd para., page 27, 3rd para., page 28, page 29, 1st para., page 31, 2nd para., and page 32, 1st para.

The foregoing amendments do not add new matter, and are made solely to advance prosecution, and without disclaimer of any subject matter removed by amendment. Applicant reserves the right to file one or more continuing applications directed to cancelled subject matter.

35 USC §102(e) rejection

Claims 1-13 are rejected as allegedly being anticipated by Schatz et al. (US20060194202). In order for a reference to anticipate, each and every element as set forth in the claim must be found, either expressly or inherently described, in a single prior art reference. MPEP §2131.

The claims have been amended, to include in step a) the first at least partially double-stranded oligonucleotide comprises a modification allowing the oligonucleotide to be immobilised to a surface, wherein the modification comprises a second single-stranded overhang and in step c) the first ligation product comprises a modification allowing the first ligation product to be immobilised to a surface, wherein the modification of the first ligation product essentially corresponds to the second single-stranded overhang of the first oligonucleotide. The Examiner argues that Schatz et al. teaches that the first ligation product is immobilized via the long single-stranded overhang at page 9, para. 0136. See page 3 of the office action. Applicant respectfully disagrees. Schatz et al. fails to teach a modification allowing the oligonucleotide to be immobolised to a surface that comprises a single-stranded overhang, or a modification allowing the first ligation product to be immobilised to a surface that comprises a single-stranded overhang. The Examiner cites para. 0136 of US20060194202, which lists, in relevant part, the following modifications:

> Such modifications comprise, among others, but are not limited to, biotin, iminobiotin, digoxygenin, sulfhydryl groups, dicyclohexylcarbodiimide, fluorosceine, acridine, and rhodamine. The oligonucleotide may be coupled to a surface, ... via avidin such as streptavidin, monomeric avidine, thyrosine-modified avidine, or antibodies, particularly such antibodies directed against any of the aforementioned compounds, sulfhydryl groups or any

other suitable compound capable of specific binding of a ligand, which can be attached to an oligonucleotide, either during its synthesis or postsynthetically.

Para. 0132 of US20060194202 also states:

Possible suitable modifications may result from the incorporation of low molecular weight compounds to the at least partially double-stranded oligonucleotide whereby, preferably, biotin, digoxygenin, fluoresceine thiocyanate (FITC), amino compounds or succinyl esters may be used.

Para. 0136 of US20060194202 states that a modification allows the coupling, binding or immobilisation of the respective oligonucleotide to a surface. In the present claims, the modification comprises a single-stranded overhang. This overhang immobilises the respective nucleotide by hybridising to a single-stranded stretch of nucleic acid on the surface.

Neither of the above paragraphs, however, teach a modification which allows an oligonucleotide to be immobilised to a surface that comprises a single-stranded overhang.

In addition, in the Response to arguments section, item 9 of the office action, Examiner cites pages 7-8 and para. 0131 as teaching a first and a second single-stranded overhang because one end of said oligonucleotide is modified to allow coupling to a surface or blocked to allow ligation to a second nucleotide. Specifically, para. 0131 of US20060194202, in relevant part, states:

[0131] ... The library oligonucleotides usually consist of one consecutive string of nucleotides that can fold back on themselves to form a double-strand with an internal loop. Alternatively, they may consist of two strands, namely an upper and a lower strand which are hybridised but not otherwise linked to each other. In the latter case, the upper strand has a blocked 5' terminal nucleotide, whereas the lower strand has a blocked 3' terminal nucleotide. The upper strand and the lower strand are at least partially complementary to each other and form at least partially a double-stranded structure or duplex. Either the 3' end of the upper strand or the 5' end of the lower strand is protruding relative to the 5' end of the lower strand or to the 3'end of the upper strand. The first alternative is also referred to herein 3' overhang, and the second alternative is also referred to herein as 5' overhang. The length of the overhang may be as little as one nucleotide. The length of the overhang may thus be one, two, three, four, five, six, seven or more nucleotides. Any reference to the 5' end and 3' end, respectively, is made under the assumption that both sequence annotation and synthesis direction is from the left side to the right side.

Para. 0131 of US20060194202 describes library oligonucleotides that may consist of two strands, which are hybridized to each other. The cited paragraph teaches that the ends are blocked, which would make them unavailable for hybridization to another nucleic acid on the

surface, therefore, in the reference, neither the oligonucleotide nor the first ligation product could be immobilized to the surface via the single-stranded overhang.

Para. 0132 of US20060194202 continues, in relevant part:

> [0132] ... Such orientation is created by blocking the end of the at least partially double-stranded oligonucleotide that is different from the end defined by the protruding 3' end of the upper strand and the protruding 5' end of the lower strand, respectively. Accordingly, the end to be blocked is defined by the 5' end of the upper strand and the 3' end of the lower strand. Such blocking may be either realised by the loop structure or by any other suitable modifications known to the one skilled in the art. Possible suitable modifications may result from the incorporation of low molecular weight compounds to the at least partially double-stranded oligonucleotide whereby, preferably, biotin, digoxygenin, fluoresceine thiocyanate (FITC), amino compounds or succinyl esters may be used.

Para. 0132 teaches that one end is available to be ligated to another nucleotide, which process enlarges the nucleotide to be synthesized. The other end, "that is different" is blocked by either the loop structure or another suitable modification. Again such blocking prevents the "different" end from hybridizing to another nucleic acid on the surface for purposes of immobilization. In addition, the "another suitable modification" cannot include a single stranded overhang, as the specification of US20060194202 fails to teach that a modification allowing the oligonucleotide to be immobolised to a surface can comprise a single-stranded overhang.

Neither the cited paragraphs nor the remainder of the specification of US20060194202 teach a modification allowing the oligonucleotide to be immobilised to a surface that comprises a single-stranded overhang, or a modification allowing the first ligation product to be immobilised to a surface that comprises a single-stranded overhang. As Schatz et al. fails to teach or suggest all of the limitations of the present claims, the reference cannot be anticipatory. In view of the foregoing, Applicant respectfully requests that the Examiner withdraw the rejection.

CONCLUSION

In view of the foregoing arguments/amendments, Applicant submits that the application is in condition for allowance. Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact the undersigned to expedite prosecution of the application.

The Commissioner is hereby authorized by this paper to charge any fees during the entire pendency of this application including fees due under 37 C.F.R. §§1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account 50-4520. **This paragraph is intended to be a CONSTRUCTIVE PETITION FOR EXTENSION OF TIME in accordance with 37 C.F.R. §1.136(a)(3).**

Respectfully submitted,

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